



Rotiere jede Form. Antworte mit dem neuen Koordinatenpunkt.

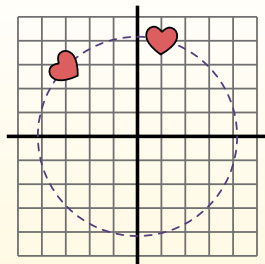
$\theta = \hat{\text{Ángulo de rotação}}$

Fórmula de rotación

$$x1 = x \times \cos(\theta) - y \times \sin(\theta)$$

$$y1 = x \times \sin(\theta) + y \times \cos(\theta)$$

En el ejemplo de la derecha, la forma está en las coordenadas (1,4).



Vamos encontrar as coordenadas se girarmos a forma em 60°.

$$1. \quad \begin{aligned} x1 &= 1 \times \cos(60) - 4 \times \sin(60) \\ y1 &= 1 \times \sin(60) + 4 \times \cos(60) \end{aligned}$$

$$2. \quad \begin{aligned} x1 &= 1 \times 0.5 - 4 \times 0.87 \\ y1 &= 1 \times 0.87 + 4 \times 0.5 \end{aligned}$$

$$3. \quad \begin{aligned} x1 &= 0.5 - 3.48 \\ y1 &= 0.87 + 2 \end{aligned}$$

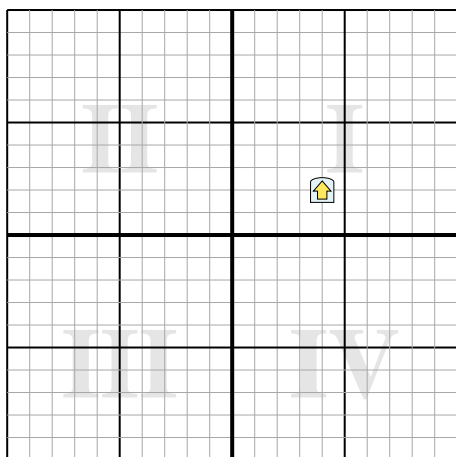
$$4. \quad \begin{aligned} x1 &= -2.98 \\ y1 &= 2.87 \end{aligned}$$

5. Al observar la forma, podemos ver que girado 60° está en (-2.98, 2.87).

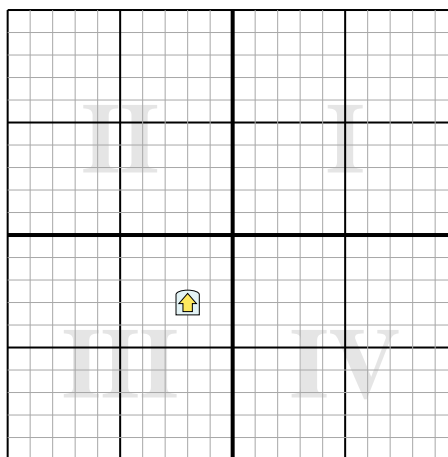
Antworten

1. _____
2. _____
3. _____
4. _____

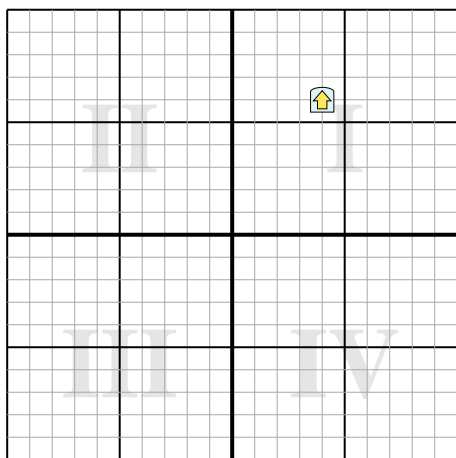
1) Rotiere die Figur -230° um den Punkt (0,0).



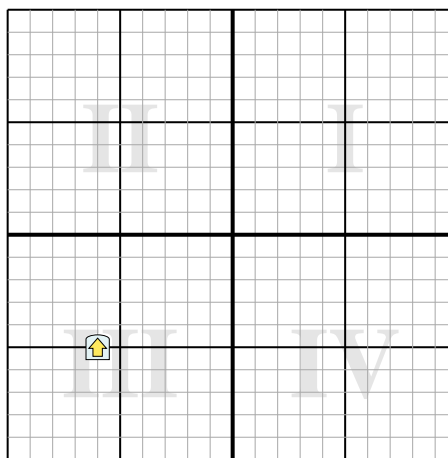
2) Rotiere die Figur 149° um den Punkt (0,0).



3) Rotiere die Figur -184° um den Punkt (0,0).



4) Rotiere die Figur 216° um den Punkt (0,0).





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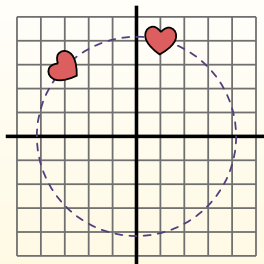
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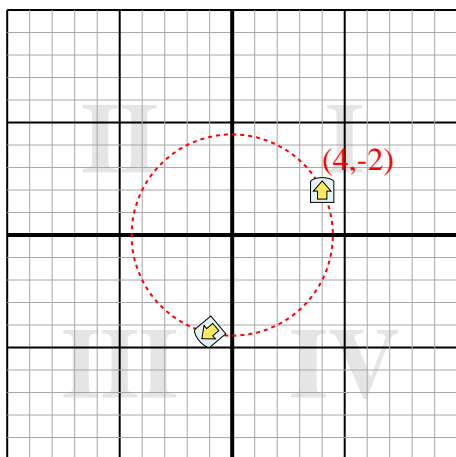
1. **(-1,-4,3)**

2. **(0,2,3,6)**

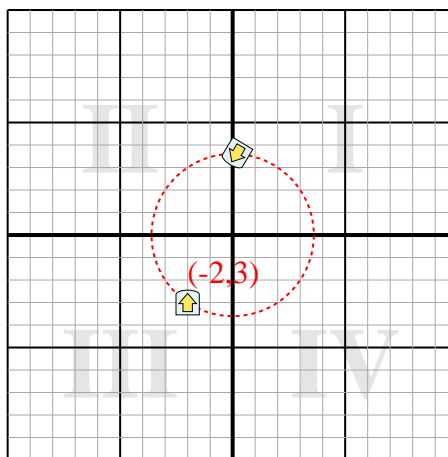
3. **(-3,6,-6,3)**

4. **(7,8,0,5)**

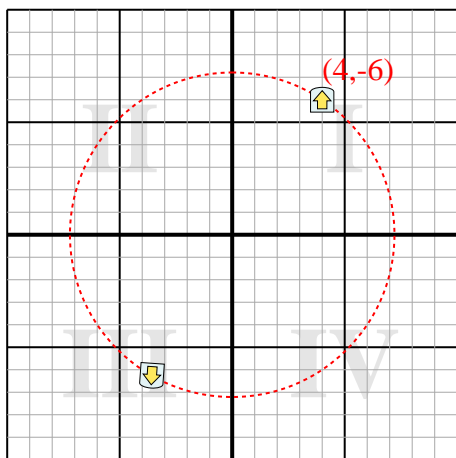
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